SEN06578-00

Shop Manual

BULLDOZER

D61EXi-24
D61PXi-24

SERIAL NUMBERS D61EXi-40001 and up
D61PXi-40001

KOMATSU®

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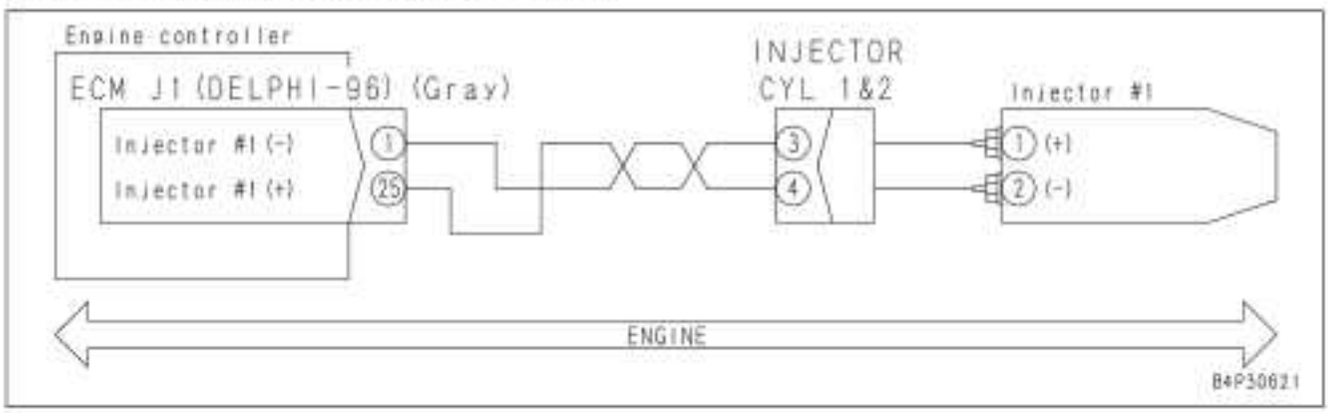
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No.	Cause	Procedure, measuring location, criteria and remarks		
5	Ground fault in wiring harness (contact with ground circuit)	If failure code is still displayed after above checks on cause 3, this check is not required. 1. Turn starting switch to OFF position. 2. Disconnect connectors ECM J1 and INJECTOR CYL 1 & 2, and connect T-adapter to each female side.		
		Resistance	Between ground and ECM J1 (female) (25) or INJECTOR CYL 1 & 2 (female) (3)	Min. 100 kΩ
			Between ground and ECM J1 (female) (1) or INJECTOR CYL 1 & 2 (female) (4)	Min. 100 kΩ
6	Short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Disconnect connectors ECM J1 and INJECTOR CYL 1 & 2, and connect T-adapter to female side of ECM J1.		
		Continuity	Between ECM J1 (female) (25) and each pin other than pin (25)	No continuity (no sound is heard)
			Between ECM J1 (female) (1) and each pin other than pin (1)	No continuity (no sound is heard)
7	Hot short circuit in wiring harness	1. Turn starting switch to OFF position. 2. Insert T-adapter to connector ECM J1. 3. Turn starting switch to ON position.		
		Voltage	Between ECM J1 (25) and ground	Max. 6 V
		If measured voltage is abnormal, disconnect connector INJECTOR CYL 1 & 2 and measure the voltage at the same point again. If the abnormality persists, a positive (+) line is defective. If the voltage is restored back to a normal range, a negative (-) line is defective.		
8	Defective another cylinder's injector or wiring harness	When failure code for abnormality in multiple injectors is displayed, perform troubleshooting these first.		
9	Defective engine controller	If no failure is found by above checks, engine controller is defective. (Since this is an internal defect, troubleshooting cannot be performed.)		

Circuit diagram related to injector #1



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No.	Cause	Procedure, measuring location, criteria and remarks
2	Defective AdBlue/DEF pump system	If failure code [CA3558] or [CA3559] or [CA3571] or [CA3572] is displayed on the abnormality record screen, perform troubleshooting these first.
3	Defective AdBlue/DEF injector system	If failure code [CA3567] is displayed on the abnormality record screen, perform troubleshooting these first.
4	Failure of the AdBlue/DEF injector	See "TESTING AND ADJUSTING", "SERVICE MODE" and "METHOD FOR SETTING WITH TESTING MENU (SCR SERVICE TEST)" in "SETTING AND OPERATION OF MACHINE MONITOR" to perform "AdBlue/DEF Injector Rate Test". Case 1: AdBlue/DEF injection stops The AdBlue/DEF injector or the AdBlue/DEF pressure hose may be clogged. Proceed to cause 5 to determine the cause of the failure. Case 2: AdBlue/DEF injection continues for more than 2 seconds without stoppage 1. The AdBlue/DEF injector is stuck open. Replace with a new one. 2. To remove the accumulated deposits of AdBlue/DEF in SCR, see "SETTING AND OPERATION OF MACHINE MONITOR" of "SERVICE MODE", and "METHOD FOR SETTING WITH TESTING MENU (SCR SERVICE TEST)" to perform "Active Regeneration for Service" for 3 times (Reference: Approximately 2 hours is required in total (40 minutes per operation))
5	Clogged AdBlue/DEF pressure hose	1. Prepare a container at the injector to receive drained AdBlue/DEF. 2. Remove the hose at AdBlue/DEF injector to allow AdBlue/DEF to drain. 3. See Testing and adjusting, "service modes" of "setting and operating machine monitor", "operating method of testing menu (SCR service test)" to perform an "AdBlue/DEF pump pressure rising test". 4. If AdBlue/DEF flows out from the AdBlue/DEF pressure hose while the AdBlue/DEF pump pressure does not reach 900 kPa, there is no clogging in the AdBlue/DEF pressure hose. 5. If the AdBlue/DEF pump pressure stays at 900 kPa, there is a clogging in the AdBlue/DEF pressure hose. Clean or replace the AdBlue/DEF hose. **REMARK** Failure code [CA1682] may be displayed if the pressure does not rise within 3 minutes while performing the "AdBlue/DEF pump pressure rising test".
6	Clogged AdBlue/DEF injector (temporarily clogged)	If failure code is still displayed after above checks, the AdBlue/DEF injector may have been temporarily clogged but is now normal. Perform "Loaded Diagnostics Operation To Clear Failure Code". If this failure code is cleared, repair is completed.
7	Defective engine controller	If no failure is found by above checks, engine controller is defective. (Since this is an internal defect, troubleshooting cannot be performed.)

Loaded diagnostics operation to clear failure code

Perform the following procedure to check that the repair is completed.

(Make sure that this failure code is cleared after this procedure.)

⚠ **Park the machine on a level ground, and move parking brake lever to LOCK position.**

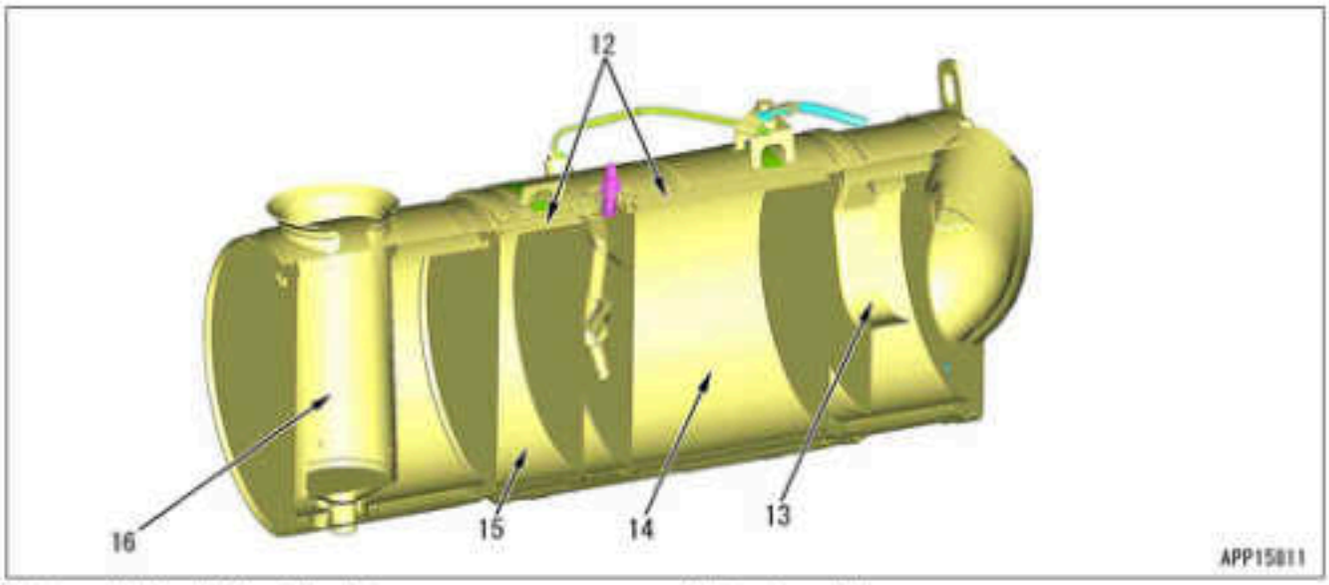
1. Turn the starting switch to OFF position, and shut down the engine controller.
2. Turn the starting switch to ON position, and start the engine.
3. Perform warm-up operation until AdBlue/DEF injection can be performed.
4. Check that monitoring code: 19108 "AdBlue/DEF Pump Pressure" is 900±100 kPa.
5. Run the engine at low idle speed for approximately 1 minute.
6. Perform brake, F3, steering and work equipment relief operation according to the following procedure.

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Unit: mm

No.	Item	Judgment criteria					Remedy
		Standard dimension			Repair limit		
1	Suction valve spring	Free length x outside diameter	Installed length	Load at installed height	Free length	Load at installed height	Replace the spring if damaged or deformed
		39.2 x 4.45	33.5	5.10 N {0.52 kg}	-	4.12 N {0.42 kg}	
2	Spool return spring (fan, ripper)	41.1 x 19.3	40.5	34.3 N {3.50 kg}	-	27.4 N {2.80 kg}	
3	Spool return spring (lift)	41.5 x 19.3	40.5	44.2 N {4.51 kg}	-	35.4 N {3.61 kg}	
4	Spool return spring (lift)	35.2 x 17.4	32.3	80.4 N {8.20 kg}	-	64.3 N {6.56 kg}	
5	Spool return spring (lift)	58.2 x 18.1	39.5	313.6 N {32.0 kg}	-	250.9 N {25.6 kg}	
6	Spool return spring (tilt, angle)	41.9 x 18.6	40.5	52.9 N {5.39 kg}	-	42.3 N {4.31 kg}	
7	Back pressure valve spring	58.3 x 17	36	56.9 N {5.80 kg}	-	45.5 N {4.64 kg}	

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A: From AdBlue/DEF mixing tube
B: To exhaust pipe
1: SCR body
2: SCR temperature sensor
3: SCR outlet NOx sensor
4: SCR outlet temperature sensor
5: Temperature sensor controller
6: Ammonia sensor
7: Hanger plate
8: water baffle
9: Water drain port
10: Sensor table
11: Sensor table band
12: Catalyzer hold mat
13: Water dam
14: Downstream SCR catalyst and ammonia oxidation catalyst (integrated type)
15: Upstream SCR catalyst
16: Rectifier tube

- SCR assembly consists of rectifier tube (16) equalizing the distribution of flow speed by leading exhaust gas, upstream SCR catalyst (15), downstream SCR catalyst, ammonia oxidation catalyst (14), and water dam which prevents rain water from entering into downstream SCR catalyst and ammonia oxidation catalyst (14) while exhausting gas.
- Ammonia oxidation catalyst (a part of 14) oxidizes ammonia to water and nitrogen with ammonia oxidation catalyst (a part of 14) to prevent ammonia which is supplied to SCR assembly from being released out because SCR catalyst (a part of 14, 15)cannot completely consume it.
- Each 1 piece of SCR temperature sensor (2), SCR outlet temperature sensor (4), ammonia sensor (6), and SCR outlet NOx sensor (3) are installed. These sensors are usable for various troubleshooting, such as they are used to control the feedback of denitration efficiency or they monitor that SCR catalyst properly functions or not.
- Rectifying tube (16) equalizes the distribution of exhaust gas flow speed.
- SCR catalyst (15, a part of 14) uses the ceramic honeycomb.
- The catalyzer holding mat (12) is made of a specific fiber and protects the ceramic catalyst against vibrations by the engine and the machine body. It also protects the outer periphery of SCR assembly against a heat transfer of the ceramics during operation.
- Water dam (13) is located at the upstream side of the outlet and prevents rainwater from entering into downstream SCR catalyst unit and ammonia oxidation catalyst (14).
- Water baffle (8) is located at the downstream side of the outlet and prevents rainwater at outlet from splashing over the detection part of NOx sensor.

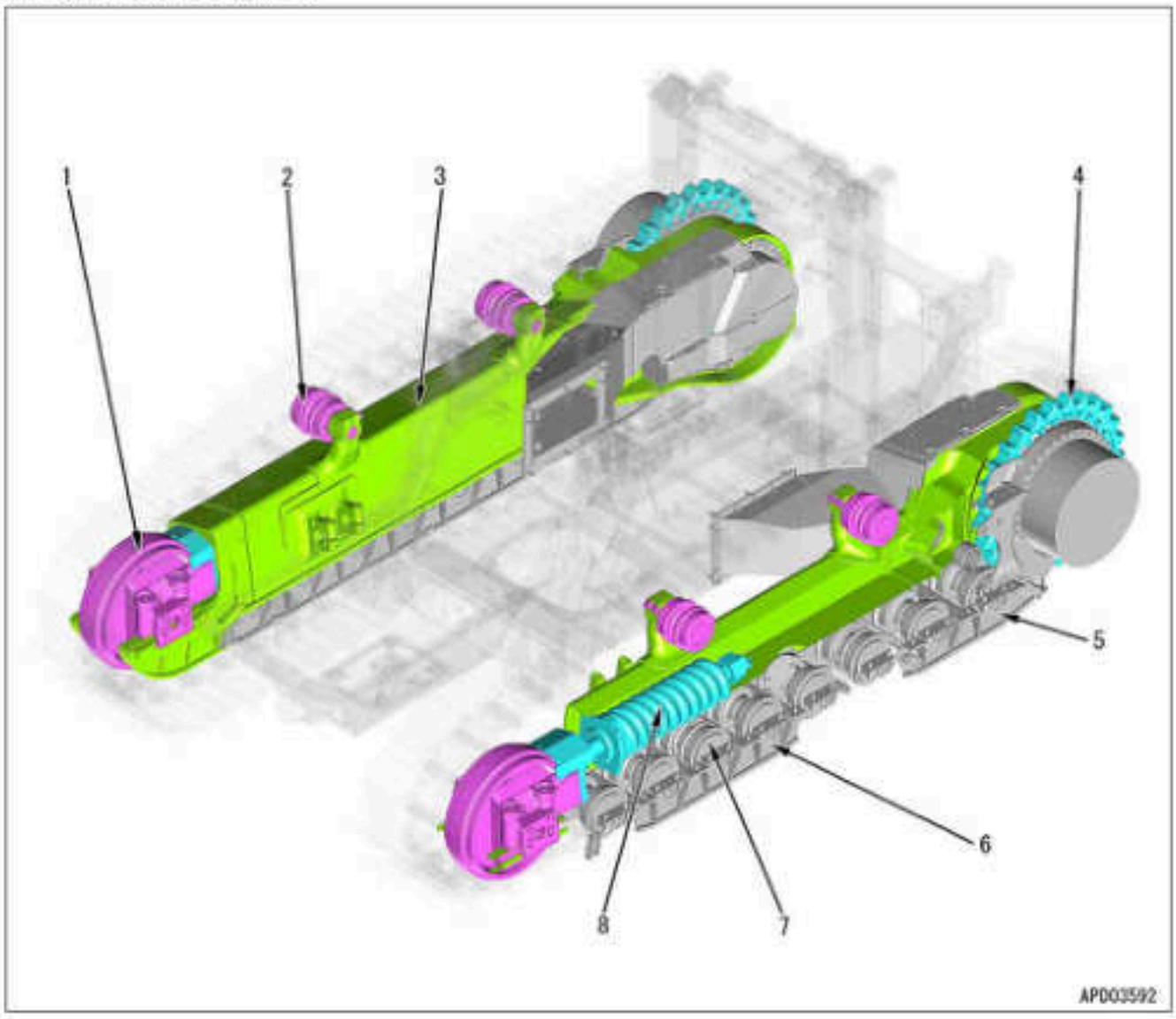
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TRACK FRAME AND IDLER CUSHION

STRUCTURE OF TRACK FRAME AND IDLER CUSHION

General view and sectional view

The figure shows D61EXI-24.



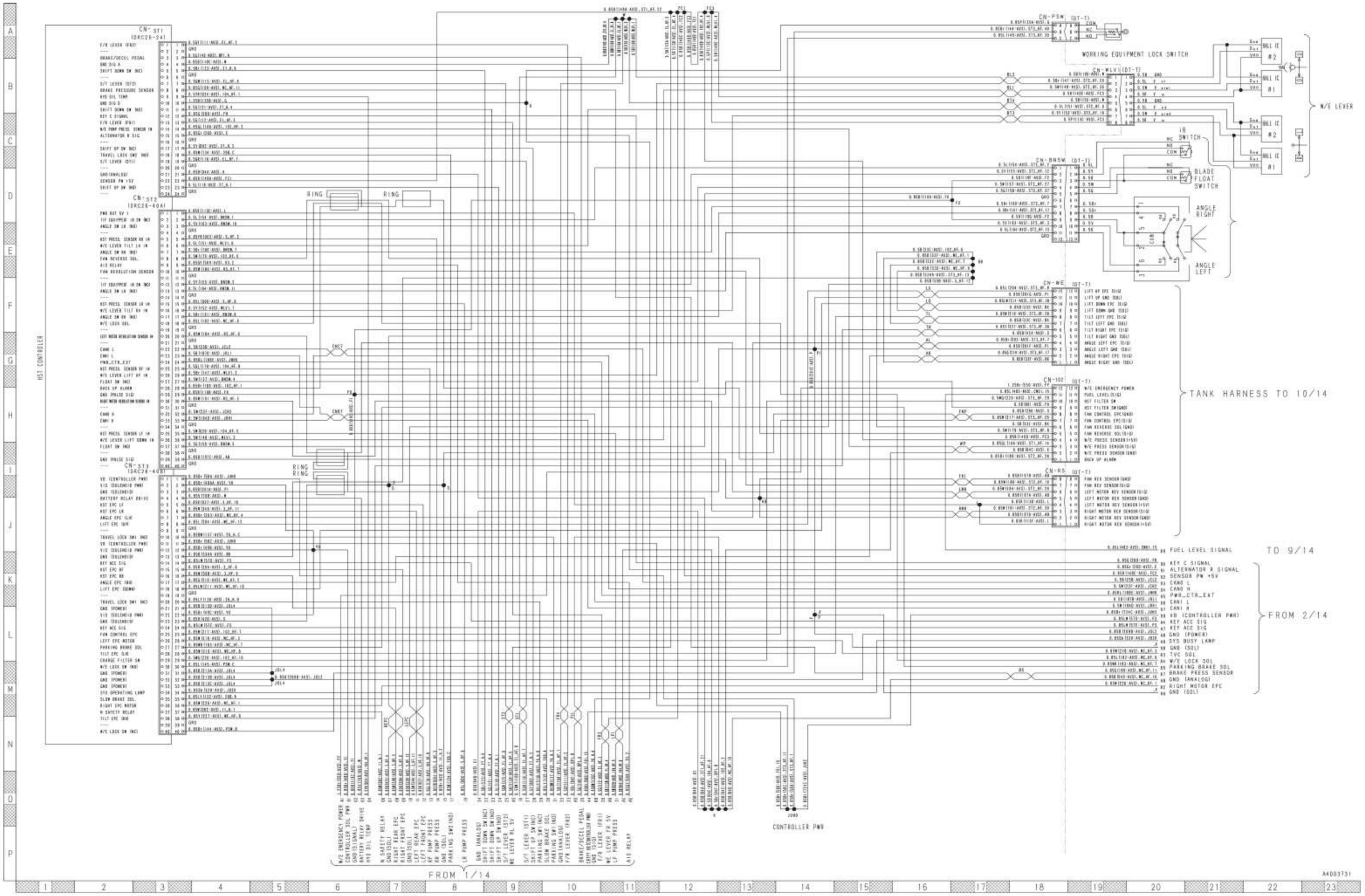
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ELECTRICAL CIRCUIT DIAGRAM (3/14)

D61EXI-24, D61PXI-24

REMARK

This figure includes the equipment and device that are unavailable as optional items in some areas.



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